



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Daryl D. Starr et al.

Ser. No: 09/675,700

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Examiner: Barbara N. Burgess

Atty. Docket No: ALA-010B

GAU: 2157

For: INTELLIGENT NETWORK STORAGE INTERFACE DEVICE

July 30, 2008

MS Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL BRIEF FOR APPELLANT

This is a Supplemental Appeal Brief responsive to the rejection of claims 1-7 and 21-33 on May 2, 2008.¹ A Final Rejection of claims 1-7 and 21-33 was mailed September 20, 2007. This Final Rejection followed five non-final rejections that were traversed by appellants. A Notice of Appeal was mailed by appellants on December 12, 2007, and an Appeal Brief was filed January 31, 2008. The Examiner reopened prosecution on May 2, 2008, with a new Office Action that is very similar to the Final Rejection. A Request for Reinstatement of Appeal accompanies this Supplemental Appeal Brief. Those items that are unchanged from the prior Appeal Brief are listed below as simply unchanged.

Real Party In Interest

Unchanged.

¹ The "Office Action Summary" lists claims 1-33 as pending and 1-33 and as rejected, however, the "Detailed Action" rejects claims 1-7 and 21-33. As noted in the Appeal Brief, appellants canceled claims 8-20 and added new claims 21-33 in an Election and Amendment mailed June 31, 2005, and so the "Detailed Action" is correct as to the claims at issue.

Related Appeals and Interferences

Unchanged.

Status of Claims

Unchanged.

Status of Amendments

Unchanged.

Summary of Claimed Subject Matter

Unchanged.

Grounds of Rejection to be Reviewed on Appeal

(1) The rejection of claims 1, 3-4, 6-7, 21, 23-24 and 26-33 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,650,640 Muller et al. (hereinafter "Muller") in view of U.S. Patent No. U.S. Published Application No. 20010048681 to Bilic et al. ("Bilic") and in further view of U.S. Patent No. 5,732,220 to Mayfield et al. (hereinafter "Mayfield").

(2) The rejection of claims 2, 5, 22 and 25 under 35 U.S.C. §103(a) as allegedly being unpatentable over Muller in view of Bilic and in further view of U.S. Patent No. 6,065,096 to Day.

Argument

I. Regarding Grounds of Rejection (1), appellants demonstrate below that the Office Action is deficient in two primary ways. First, the Office Action ignores certain claim limitations. Second, the Office Action points to features in the reference documents that do not disclose the limitations of the claims. In short, the Office Action fails to present a *prima facie* case of obviousness, as explained in the detailed analysis below.

A. Claim 1

Regarding claim 1, the Office Action states, on pages 2 and 3:

As per claim 1, Muller discloses an interface device for a computer, the interface device connectable to a network and a storage unit, the storage unit including a disk drive, the interface device comprising:

- A sequencer including a hardware logic circuit configured to process a transport layer header of a network packet (column 4, lines 48-50, column 7, lines 20-25, 31-35, 64-67, column 8, lines 1-5, 17-20, 50-60, column 9, lines 1-5, column 15, lines 35-38, column 35, lines 53-67, column 36, lines 11-30);
- A memory adapted to store control information regarding a network connection being handled by said device (column 4, lines 20-25, column 9, lines 14-16, 20-25, 56-58, column 10, lines 1-7, column 11, lines 46-59, column 12, lines 11-15, column 52, lines 64-67, column 53, lines 1-7);
- A mechanism for associating said packet with said control information (column 4, lines 45-50, 58-67, column 8, lines 50-60, 66-67, column 9, lines 13-17, 22-35, 66-67, column 10, lines 2-7, column 11, lines 46-59, column 12, lines 11-15, column 16, lines 59-67).

Muller does not explicitly disclose:

- selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select the group of packets for reassembly depending on which of the communication protocols was used in transmitting the packets. It controls the host interface logic so to write the data packets that do not belong to the identified group to the host memory without reassembly processing by the network interface device (paragraphs [0013, 0023, 0026, 0043, 0046]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Bilic's selecting whether to process packet or send to storage, thereby avoiding the computer in Muller's system to reduce the burden of frame reassembly imposed on the host processor.

The above-quoted portion of the Office Action is believed to be identical to the corresponding portion in the Final Rejection. The Office Action, however, adds the following:

Muller, in view of Bilic, does not explicitly disclose:

- the storage unit including a disk drive.

However, the use and advantage of storage unit including a disk drive is well-known to one of ordinary skill in the art as evidenced by May

(column 4, lines 15-30). Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate May's disk drive in Muller's device enabling data to be stored.

Appellants appreciate the Examiner's admission that "Muller, in view of Bilic, does not explicitly disclose: the storage unit including a disk drive." Appellants respectfully assert, moreover, that simply finding a reference that discloses a storage unit including a disk drive does not render claim 1 obvious, because none of the cited references, alone or in combination, teach anything close to what is claimed.

The Office Action admits that Muller does not disclose "selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer." Appellants respectfully assert that Bilic also does not disclose this limitation. Note that claim 1, for example, includes the limitation of "the storage unit including a disk drive." None of the paragraphs of Bilic cited by the Office Action teach or suggest "selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer," wherein "the storage unit includ(es) a disk drive." Instead, as noted in paragraph [0013] of Bilic, "In some preferred embodiments of the present invention, the embedded processor is programmed to process TCP/IP and UDP/IP headers, and thus to reassemble TCP and UDP frames (or segments) in the host memory. Packets transferred using other protocols are passed through to the host processor without header processing or reassembly."

In other words, in contrast with the limitation of "selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer," Bilic does not even suggest that packets transferred using different protocols go to different memories, but rather states that all the packets go to the host memory, albeit with different processing. That is, Bilic does not teach or suggest that certain packets "avoid... the computer," as recited in claim 1. Beyond that, Bilic certainly does not teach or suggest that data from a packet are sent to "a storage unit, the storage unit including a disk drive," as recited in claim 1. Because neither Muller nor Bilic teach or suggest "a mechanism for ... selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the

computer,” appellants respectfully assert that claim 1 and all the claims that depend from claim 1 are nonobvious over Muller in view of Bilic.

Beginning on page 10 of the Final Rejection, the Examiner provided a “Response to Arguments” section that stated that the preamble of claim 1 was not being accorded any patentable weight. In response to that statement, appellants argued in the Appeal Brief that the preamble should be considered a limitation of the claim for several reasons. The Examiner has in the Office Action withdrawn the allegation that the preamble is not a limitation, tacitly admitting the correctness of appellants’ position.

Instead of ignoring the limitation, the Office Action instead provides Mayfield as a reference that allegedly teaches: “the storage unit including a disk drive.” But it is not a storage unit or disk drive in isolation that must be taught or suggested by the prior art. There are probably hundreds of thousands of patents that include a storage unit that is a disk drive. Rather, to render claim 1 obvious, the references taken together need to teach or suggest, among other limitations, “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Neither Muller nor Bilic teach or suggest such a limitation, as discussed above.

Mayfield also does not teach or suggest “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” The passage of Mayfield cited by the Office Action (column 4, lines 15-30) has nothing to do with “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Appellants respectfully assert that the remainder of Mayfield is similarly irrelevant.

Assuming arguendo that Muller, Bilic and Mayfield would somehow have been combined by a person of ordinary skill in the art (a “PHOSA”), that combination would have been substantially removed from teaching or suggesting “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Moreover, there is simply no reason given or apparent why a PHOSA would have made a

leap from the assumed combination to the limitations recited in claim 1. For at least these reasons, appellants respectfully assert that the Examiner has not presented a *prima facie* case of obviousness, and the rejection of claim 1 should be reversed.

B. Claim 3

Regarding claim 3, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 3.

C. Claim 4

Regarding claim 4, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 4.

D. Claim 6

Regarding claim 6, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 6.

E. Claim 7

Regarding claim 7, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 7.

F. Claim 21

Regarding claim 21, the Final Rejection states:

As per claim 21, Muller discloses an interface device for a computer, the interface device connectable to a network and a storage unit, the storage unit including a disk drive, the interface device comprising:

- A receive mechanism that processes a Transmission Control Protocol (TCP) header of a network packet (column 4, lines 48-50, column 7, lines 20-25, 31-35, 64-67, column 8, lines 1-5, 17-20,

50-60, column 9, lines 1-5, column 15, lines 35-38, column 35, lines 53-67, column 36, lines 11-30);

- A memory storing a combination of information describing an established TCP connection (column 4, lines 20-25, column 9, lines 14-16, 20-25, 56-58, column 10, lines 1-7, column 11, lines 46-59, column 12, lines 11-15, column 52, lines 64-67, column 53, lines 1-7);
- A processing mechanism that associates said packet with said information (column 4, lines 45-50, 58-67, column 8, lines 50-60, 66-67, column 9, lines 13-17, 22-35, 66-67, column 10, lines 2-7, column 11, lines 46-59, column 12, lines 11-15, column 16, lines 59-67).

Muller does not explicitly disclose:

- selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select the group of packets for reassembly depending on which of the communication protocols was used in transmitting the packets. It controls the host interface logic so to write the data packets that do not belong to the identified group to the host memory without reassembly processing by the network interface device (paragraphs [0013, 0023, 0026, 0043, 0046]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Bilic's selecting whether to process packet or send to storage, thereby avoiding the computer in Muller's system to reduce the burden of frame reassembly imposed on the host processor.

The above-quoted portion of the Office Action is believed to be identical to that in the Final Rejection. The Office Action adds the following:

Muller, in view of Bilic, does not explicitly disclose:

- the storage unit including a disk drive.

However, the use and advantage of storage unit including a disk drive is well-known to one of ordinary skill in the art as evidenced by May (column 4, lines 15-30). Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate May's disk drive in Muller's device enabling data to be stored.

Appellants appreciate the Examiner's admission that "Muller, in view of Bilic, does not explicitly disclose: the storage unit including a disk drive." Appellants respectfully assert, moreover, that simply finding a reference that discloses a storage unit

including a disk drive does not render claim 21 obvious, because none of the cited references, alone or in combination, teach anything close to what is claimed.

The Office Action admits that Muller does not disclose “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer.” Appellants respectfully assert that Bilic also does not disclose this limitation. Note that claim 21, for example, includes the limitation of “the storage unit including a disk drive.” None of the paragraphs of Bilic cited by the Office Action teach or suggest “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Instead, as noted in paragraph [0013] of Bilic, “In some preferred embodiments of the present invention, the embedded processor is programmed to process TCP/IP and UDP/IP headers, and thus to reassemble TCP and UDP frames (or segments) in the host memory. Packets transferred using other protocols are passed through to the host processor without header processing or reassembly.”

In other words, in contrast with the limitation of “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” Bilic does not even suggest that packets transferred using different protocols go to different memories, but rather states that all the packets go to the host memory, albeit with different processing. That is, Bilic does not teach or suggest that certain packets “avoid... the computer,” as recited in claim 21. Beyond that, Bilic certainly does not teach or suggest that data from a packet are sent to “a storage unit, the storage unit including a disk drive,” as recited in claim 21.

As noted above, Mayfield also does not teach or suggest “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” The passage of Mayfield cited by the Office Action (column 4, lines 15-30) has nothing to do with “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Appellants respectfully assert that the remainder of Mayfield is similarly irrelevant.

Assuming arguendo that Muller, Bilic and Mayfield would somehow have been combined by a PHOSA, that combination would have been substantially removed from teaching or suggesting “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Moreover, there is simply no reason given or apparent why a PHOSA would have made a leap from the assumed combination to the limitations recited in claim 1. For at least these reasons, appellants respectfully assert that the Examiner has not presented a *prima facie* case of obviousness, and the rejection of claim 21 should be reversed.

G. Claim 23

Regarding claim 23, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 23.

H. Claim 24

Regarding claim 24, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 24.

I. Claim 26

Regarding claim 26, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 26.

J. Claim 27

Regarding claim 27, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 27.

K. Claim 28

Regarding claim 28, the Office Action states:

As per claim 28, Muller discloses a method for operating an interface device for a computer, the interface device connectable to a network and a storage unit, the storage unit including a disk drive, the method comprising:

- Receiving, by the interface device from the network, a packet containing data and a Transmission Control Protocol (TCP) header (column 4, lines 48-50, column 7, lines 20-25, 31-35, 64-67, column 8, lines 1-5, 17-20, 50-60, column 9, lines 1-5, column 15, lines 35-38, column 35, lines 53-67, column 36, lines 11-30);
- Processing, by the interface device, the TCP header (column 4, lines 45-50, 58-67, column 8, lines 50-60, column 9, lines 13-17, 22-35, 66-67);
- Storing, on the interface device, information regarding a TCP connection (column 4, lines 20-25, column 9, lines 14-16, 20-25, 56-58, column 10, lines 1-7, column 11, lines 46-59, column 12, lines 11-15);
- Associating, by the interface device, the packet with the TCP connection (column 35, lines 53-67, column 36, lines 11-30);

Muller does not explicitly disclose:

- Selecting, by the interface device, whether to process the packet by the computer or to send the data from the packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select the group of packets for reassembly depending on which of the communication protocols was used in transmitting the packets. It controls the host interface logic so to write the data packets that do not belong to the identified group to the host memory without reassembly processing by the network interface device (paragraphs [0013, 0023, 0026, 0043, 00461]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Bilic's selecting whether to process packet or send to storage, thereby avoiding the computer in Muller's system to reduce the burden of frame reassembly imposed on the host processor.

The above-quoted portion of the Office Action is believed to be identical to that in the Final Rejection. The Office Action adds the following:

Muller, in view of Bilic, does not explicitly disclose:

- the storage unit including a disk drive.

However, the use and advantage of storage unit including a disk drive is well-known to one of ordinary skill in the art as evidenced by May (column 4, lines 15-30). Therefore, one of ordinary skill in the art at the

time the invention was made would have found it obvious to implement or incorporate May's disk drive in Muller's device enabling data to be stored.

Appellants appreciate the Examiner's admission that "Muller, in view of Bilic, does not explicitly disclose: the storage unit including a disk drive." Appellants respectfully assert, moreover, that simply finding a reference that discloses a storage unit including a disk drive does not render claim 28 obvious, because none of the cited references, alone or in combination, teach anything close to what is claimed.

The Office Action admits that Muller does not disclose "selecting, by the interface device, whether to process the packet by the computer or to send the data from the packet to the storage unit, thereby avoiding the computer." Appellants respectfully assert that Bilic also does not disclose this limitation. Note that claim 28, for example, includes the limitation of "the storage unit including a disk drive." None of the paragraphs of Bilic cited by the Office Action teach or suggest "selecting, by the interface device, whether to process the packet by the computer or to send the data from the packet to the storage unit, thereby avoiding the computer." Instead, as noted in paragraph [0013] of Bilic, "In some preferred embodiments of the present invention, the embedded processor is programmed to process TCP/IP and UDP/IP headers, and thus to reassemble TCP and UDP frames (or segments) in the host memory. Packets transferred using other protocols are passed through to the host processor without header processing or reassembly."

In other words, Bilic does not even suggest that packets transferred using different protocols go to different memories, but rather states that all the packets go to the host memory, albeit with different processing. That is, Bilic does not teach or suggest that certain packets "avoid... the computer," as recited in claim 28. Beyond that, Bilic certainly does not teach or suggest that data from a packet are sent to "a storage unit, the storage unit including a disk drive," as recited in claim 28. Because neither Muller nor Bilic teach or suggest "selecting, by the interface device, whether to process the packet by the computer or to send the data from the packet to the storage unit, thereby avoiding the computer," appellants respectfully assert that claim 28 and all the claims that depend from claim 28 are nonobvious over Muller in view of Bilic.

As noted above, Mayfield also does not teach or suggest “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” The passage of Mayfield cited by the Office Action (column 4, lines 15-30) has nothing to do with “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Appellants respectfully assert that the remainder of Mayfield is similarly irrelevant.

Assuming arguendo that Muller, Bilic and Mayfield would somehow have been combined by a PHOSA, that combination would have been substantially removed from teaching or suggesting “selecting whether to process said packet by said computer or to send data from said packet to the storage unit, thereby avoiding the computer,” wherein “the storage unit includ(es) a disk drive.” Moreover, there is simply no reason given or apparent why a PHOSA would have made a leap from the assumed combination to the limitations recited in claim 1. For at least these reasons, appellants respectfully assert that the Examiner has not presented a *prima facie* case of obviousness, and the rejection of claim 28 should be reversed.

L. Claim 29

Regarding claim 29, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 23.

M. Claim 30

Regarding claim 30, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 30.

N. Claim 31

Regarding claim 31, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 31.

O. Claim 32

Regarding claim 32, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 32.

P. Claim 33

Regarding claim 33, the Office Action simply repeats the Final Rejection. Appellants therefore rely on their Appeal Brief argument showing that the Final Rejection has not presented a *prima facie* case of obviousness for claim 33.

II. Regarding Grounds of Rejection (2), the Final Rejection states:

Claims 2, 5, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (hereinafter "Muller", 6,650,640 B1) in view of Bilic et al. (hereinafter "Bilic", US Patent Publication 20010048681 A1) and in further view of Day et al. (hereinafter "Day", US Patent 6065096).

Appellants note that, the Office Action simply repeats the Final Rejection with regard to claim 2, 5, 22 and 25. Appellants therefore rely on their Appeal Brief arguments showing that the Final Rejection has not presented a *prima facie* case of obviousness for those claims.

Moreover, appellants note that the Office Action has admitted to further deficiencies of Muller and Bilic with regard to the allegation of obviousness, but has not asserted any additional reference in Grounds of Rejection (2) to attempt to correct those deficiencies. That is, the Office Action admits that "Muller, in view of Bilic, does not explicitly disclose: the storage unit including a disk drive," but provides no reference or reasoning in Grounds of Rejection (2) to not correct this deficiency. Appellants

respectfully assert the Office Action has not presented a *prima facie* case of obviousness for those claims for this additional reason.

Conclusion

As detailed above, the Final Rejection fails to state a *prima facie* case of obviousness for any of the pending claims. Appellants respectfully assert that all the pending claims are allowable and requests reversal of the Examiner's rejections.

This brief is being submitted without a fee, as the fee was paid previously for the Appeal Brief.

Respectfully submitted,



Mark Lauer
Reg. No. 36,578
6601 Koll Center Parkway
Suite 245
Pleasanton, CA 94566
Tel: (925) 484-9295
Fax: (925) 484-9291

Date: 7-30-08



Mark Lauer

APPENDIX A – CLAIMS APPENDIX

Unchanged.

APPENDIX B – EVIDENCE APPENDIX

Unchanged.

APPENDIX C – RELATED PROCEEDINGS APPENDIX

Unchanged.